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Hemopneumothorax.—The authors report a young naval officer who developed severe left chest pain on the day of admission to the hospital, rapidly went into profound shock and died on the same day. Clinical examination and chest aspiration established the diagnosis of hemopneumothorax. Autopsy revealed a massive left hemothorax, and a collapsed left lung with densely adherent apex. The apical adhesions were well vascularized and showed scattered hemorrhages. There was no evidence of active tuberculosis. Five days prior to admission, the patient had experienced pain in the left supraclavicular region after slinging a heavy bag over his left shoulder. This exertion might have torn the left apical adhesions resulting in slow bleeding. Thirteen other autopsied cases of spontaneous hemopneumothorax have been reported. All were males between the ages of 18 and 44 years. Unusual exertion or trauma did not seem to be etiological factors. In most cases, the first symptom of chest pain occurred when the patient was quiet. Abdominal pain and rigidity were common leading to laparotomy in one case. The right chest was more frequently involved. Pleural adhesions were found over the involved lung in 6. Torn adhesions were found in 5 cases and ruptured bullae in 4. In 3 cases, no lesions of the involved lung were found.—*Fatal Spontaneous Hemopneumothorax: Review of the Literature and Report of a Case, F. C. Helwig & E. C. H. Schmidt, Ann. Int. Med., April, 1947, 26: 608.* —(*H. R. Nayer*)

Hemothorax.—Only 145 cases of hemothorax without obvious cause have been described in the literature to date. Exclusive of pulmonary tuberculosis and hemorrhagic effusions occurring as complications of collapse treatment, the number described is reduced to 44. Only 4 of the 44 were true hemothoraces unassociated with pneumothorax. Even these 4 cases suggested the possibility of hemopneumothorax in which air had been absorbed by the time the disease became obvious or failure to recognize the presence of air by roentgen examinations. It appears that most hemothoraces originate in rupture of vascular adhesions, either by a spontaneous pneumothorax or by extreme effort in which vascular adhesions are severed without pneumothorax. At necropsy spontaneous pneumothoraces have been related to ruptured blebs or cysts due to congenital or acquired pulmonary disease; the latter is most frequent on the basis of previous parenchymal tuberculosis. Bleeding is generally considered pleural rather than pulmonary. The clinical syndrome consists of sudden severe chest pain and dyspnea suggesting spontaneous pneumothorax followed by temporary improvement for hours or days with recurrence of pain and dyspnea and the appearance of signs of hemorrhage. Three case reports are presented, the first of spontaneous hemopneumothorax, the second, diagnosed clinically as a spontaneous hemothorax, but proved on bacteriological study to have been caused by tuberculosis, the third also simulated spontaneous hemothorax, but was proved subsequently to have been due to neoplasm. In the first true spontaneous hemopneumothorax, 1,800 cc. of dark brown fluid were aspirated two days following a typical history of the occurrence of sudden severe chest pain. The bloody fluid did not clot on standing and was

sterile. Oxygen lavage was followed by rapid reëxpansion of the lung, but a small amount of fluid had to be aspirated forty-eight hours later. On complete reëxpansion, several emphysematous blebs were demonstrated. Blood should be aspirated to prevent the organization of fibrin with the formation of pleural adhesions and marked pleural thickening leading to incomplete reëxpansion with its attendant retraction of the heart, lung, and retraction to the affected side.—*Spontaneous Hemothorax: A Discussion of the Problem Based on Three Cases, A. Bernstein, E. Klosk & A. E. Parsonnet, Dis. of Chest, September-October, 1946, 12: 394.*—(*K. R. Boucot*)

Bilateral Spontaneous Pneumothorax.—Simultaneous bilateral spontaneous pneumothorax is relatively uncommon. A case is reported in a soldier. He awoke that day with a slight pain in the right chest. Symptoms became well established when he assumed duty. In the afternoon he reported to the outpatient department, where the pneumothorax was discovered. Previous history was not significant. X-ray confirmed the diagnosis of a complete right pneumothorax. Two days later, when using a bedpan, he experienced a severe pain in the left chest. He rapidly became cyanosed and dyspneic. Examination revealed the bilateral pneumothorax; 1,200 ml. of air were removed from each pleural cavity several times. A simple device of a French blood-transfusion needle which passed through the centre of a rubber diaphragm was inserted through each anterior chest wall and the patient was left for the night. The needles became blocked and he unfortunately developed some emphysema of the chest wall. Needles were removed the next day. He was placed on sulfadiazine in anticipation of an infection from the frequent needling of the chest. Both lungs expanded. Several theories of the cause of simultaneous bilateral pneumothorax are discussed. It is thought that occasionally an orifice in the mediastinum may be present which would permit passage of the air from one pleural space to the other. The prognosis of such a condition in tuberculosis is very poor, whereas in idiopathic cases the result is usually complete recovery. In this case there was no evidence of pneumonoconiosis or lung infection, and hence it was classified as idiopathic. —*A Case of Bilateral Silultaneous Spontaneous Pneumothorax, G. M. Komrower, Brit. M. J., April 12, 1947, 4501: 488.*—(*R. W. Clarke*)

Pleural Empyema.—Chronic empyema can develop in cases treated either medically or surgically. It is the result of incomplete expansion of the lung due to (*1*) bronchopleural fistula, (*2*) thickening of the pleura or (*3*) atelectatic fibrosis of the lung. At first the fibrin deposits on the pleura are unorganized; organization occurs later. Whereas deposits on the parietal pleura can become quite thick, those on the visceral pleura remain thin. The prevailing view is that the pulmonary atelectasis is the result of compression by the pleural effusion. The author does not believe that this is entirely so. He feels that bronchial obstruction due to kinks or retained secretions is an important factor. This is seen in pathological specimens. Roentgenograms show variations in the degree of collapse in different parts of the lung, even in the absence of adhesions, indicating scattered bronchiolar obstruction. If this persists too long, irreversible changes take place. The inflammatory process extends into the interlobar septa resulting in fibrosis. The atelectasis *per se* also invites fibrosis. Purely medical treatment with antibiotics may result in elimination of the infection but not of the residual empyema, because of either insufficient aspiration or pocketing of the fluid. Incomplete expansion of the lung may be combated by deep breathing exercises. Thanks to the early elimination of toxemia by the use of penicillin, these may now be started early enough to be of value.—*Atelectasis as a Factor in the Medical Treatment of Pleural Empyema, F. Fleischner, New England J. Med., April 17, 1947, 236: 566.*—(*A. G. Cohen*)

Gingival Biopsy in Amyloidosis.—The Congo red test is subject to false positive results, and a negative test may occur in patients with

moderate involvement. Visceral biopsy is limited. Generalized amyloidosis is characteristically most abundant in perivascular tissues. Since the gingivae are highly vascular, easily accessible and markedly resistant to infection, this tissue has been used for biopsy. Patients selected for this study were from three groups: those with clinically diagnosed amyloidosis, those in whom the diagnosis was suspected and an apparently normal group. Gingival tissue, about 3 x 5 mm., was excised without any important complications. Preliminary findings indicate that the gingival tissue may not contain amyloid changes, even though liver and spleen biopsies do. Gingival biopsies often show amyloid in the absence of any of the usual clinical signs of the disease.—*Gingival Biopsy for the Diagnosis of Generalized Amyloidosis, I. J. Selikoff & E. H. Robitzek, Quart. Bull. Sea View Hosp., October, 1946, 8: 310.*—(*P. Q. Edwards*)

Q Fever.—An outbreak of Q fever occurred in stock handlers and slaughterhouse workers in Amarillo, Texas, in 1946. There were 55 cases, 18 of which had to be hospitalized. Onset was with headache, chilly sensations, general malaise and sometimes nausea. There were few if any symptoms referable to the respiratory tract. More than half of the patients experienced thoracic pain of a neuralgic character. Roentgenological examination of the chest was the main source of evidence of pulmonary lesions. The lesions were the patchy type seen in bronchopneumonia. There was little correlation between the severity of illness and the degree of pulmonary involvement. Roentgenological evidence of pulmonary lesions was obtained in 11 patients. The treatment was supportive, chemotherapy being of no avail. Most patients made an uneventful recovery. Two patients died.—*Q Fever in the United States: II. Clinical Data on an Outbreak among Stock Handlers and Slaughterhouse Workers, J. V. Irons & J. M. Hooper, J. A. M. A., March 22, 1947, 133: 815.*—(*H. Abeles*)

Fracture of First Rib.—So far only about 50 cases of fracture of the first rib have been reported in very few of which the cause was a violent coughing attack as in the present case. A contralateral thoracoplasty with removal of the first four ribs had been performed fourteen days before. While some serious and even fatal cases have been reported, the injury healed in this case within sixty days.—*Fratura isolada da primeira costela, J. M. Castello Branco, Clín. tisiol., July-September, 1946, 1: 247.*—(*A. A. Moll*)

Official Tuberculosis Control.—Why did it take fifty-two years from the first organization of an unofficial tuberculosis association, the Pennsylvania Society for the Prevention of Tuberculosis, to the establishment in 1944 of the official Tuberculosis Control Division of the United States Public Health Service. The answer is that throughout this period conflicts existed between the medical and social approaches, the private and the public handling, the local and the central control of the disease. There was in the beginning the struggle of the concepts of the "contagiousness of consumption" against that of the heredity of tuberculosis. Many conflicting medical concepts and their practical application, the emerging of the social aspects of the problem about 1902, marked by the election of a layman as secretary of the Committee on Tuberculosis of the New York City Charity Organization Society, several attempts to organize a tuberculosis movement on a national scale—all these efforts sharply define the conflict between the private medical support for treatment and the public health belief in prevention. The foundation of the National Tuberculosis Association in June, 1904, signifies a compromise. The including of treatment and prevention in the objectives of the association meant close team-work between the medical profession and the public. The general acceptance of private control of the movement showed the distrust for the official health authorities, most of them being regarded as political appointees. Not until 1913 did the National Tuberculosis Association begin to discuss the place of local and

State health departments in the tuberculosis movement, but several bills introduced in 1917 and 1918 in Congress to provide for a division of tuberculosis in the U. S. Public Health Service failed to pass. In 1919, under the impetus of World War I, the National Tuberculosis Association adopted a resolution urging the establishment of such a division, but no steps were taken to implement the idea. The migration of population that took place in the United States between World Wars I and II and increased in World War II brought about agitation for Federal aid in meeting cost for non-resident tuberculosis patients. Soon after Pearl Harbor, Surgeon General Parran established a small tuberculosis control section in the States Relations Division of the Bureau of State Services. In 1943 the National Tuberculosis Association appointed a War Emergency Committee which recommended participation in the Tuberculosis Control program by the United States Public Health Service, and this was supported by a mass education campaign carried on by every State tuberculosis association. Early in 1943 a comprehensive health bill was adopted by Congress, and on July 1, 1944, the Tuberculosis Control Division of the United States was established. At present, all the most enduring functions of the unofficial tuberculosis organizations in experimentation, demonstration, legislation and education are fundamentally directed toward the building of adequate public support for official tuberculosis control.—*The Evolution of Tuberculosis Control in the United States, R. G. Paterson, Pub. Health Rep., March 7, 1947, 62: 336.—(O. Pinner)*

Tuberculosis Mortality 1945.—During the four years of World War II the tuberculosis death rate for the United States declined as rapidly as in the four preceding years. There were 52,916 deaths from all forms of tuberculosis in the continental U. S. in 1945, the death rate was 40.1 per 100,000 as compared with 41.3 for 1944. This figure decreases to 38 when the overseas American population with 72 deaths is included. The death rate, computed on this latter basis, decreased 5.3 per cent from 1943 to 1944, and 4 per cent from 1944 to 1945. The death rates for white females and non-whites of both sexes continued to decline, that for white males showed little change. The death rate for the white population was 32.7; the rate for Negroes was 98, for Japanese 101.5, for Indians 211.9, for Chinese 267.1. In all race groups the rates for males were higher than for females; in all race-sex groups the rates increased with age after the age of 5. In 1945, there were 4,437 deaths among veterans of all wars, 62.8 per cent of World War I, 31.4 per cent of World War II. In 1944 the latter group had contributed only 22.3 per cent, and the number of deaths among them increased from 974 in 1944 to 1,394 in 1945. This increase in the proportion of World War II veterans is due to a decrease in the number of deaths among World War I veterans, as well as to the increase in the number of deaths among World War II veterans; further increase of this proportion must be expected. The death rates for the 48 States and the District of Columbia ranged from 10.9 for Wyoming to 123.1 for Arizona. There is, like in previous years, an area of low mortality extending from the Pacific Northwest to the Great Lakes and an area of high mortality extending from the Southwest to the Atlantic coast. For 36 States the rates were lower in 1945 than in 1944, for 11 States higher and for 2 the same. Tuberculosis of the respiratory system accounted for 92.4 per cent of all tuberculosis deaths. Nonrespiratory forms constituted 9.6 per cent of all tuberculosis deaths among non-whites and 7 per cent among whites. Of them, more than one-quarter were from tuberculosis of the meninges and central nervous system, and about one-quarter from disseminated tuberculosis. The death rates for nonrespiratory tuberculosis ranged from 0.8 for Wyoming to 8.4 for New Mexico.—*Tuberculosis Mortality in the United States and in Each State: 1945, E. H. Pitney & R. V. Kasius, Pub. Health Rep., April, 1947, 62: 487.—(O Pinner)*

Tuberculosis Control.—The natural decline of tuberculosis rates within the past thirty years and the application of better control measures have brought about a profound modification of this disease. In Switzerland, 50 per cent of young people are still tuberculin-negative at the age of 18. This desirable result of control measures brings with it renewed dangers, as it is clear that one open case among tuberculin-negative people can start a small epidemic. The answer to this threat lies in the application of yet more effective methods of case-finding to detect the open case, and in stringent control of known positive cases. Those who doubt that eradication of tuberculosis can ever be accomplished doubt the wisdom of aiming at a low primary infection rate. They feel that primary tuberculous infection is necessary for protection from postprimary disease, and that delaying the date of primary infection in children and young people means added hazards when these people are forced to earn a living in a community which necessarily includes open tuberculous cases. The author feels that in Switzerland it is entirely practicable to work towards eradication of the disease if enough funds could be expended to find the open case. Any such program should include an improved plan of therapy, and a harmless but effective method of immunizing tuberculin-negative cases. BCG does not entirely fulfill this demand. In spite of its relative value, it is less effective than a true primary tuberculous infection in preventing superinfection, because typical primary infection has occurred in BCG vaccinated individuals. In favor of BCG is that the danger of endogenous reinfection does not follow its use. Incidentally, the author condemns the practice of tuberculosis resorts to cater to healthy people in search of recreation in winter sports. Many thousand tuberculin-negative youths gather annually in such resorts where they are exposed to heavy infection by open tuberculous cases who mingle freely with tourists.—*Wo stehen wir in der Tuberkulosebekämpfung, E. Sommer, Schweiz. med. Wchnschr., October 26, 1946, 76: 1099.*—(*H. Marcus*)

Tuberculosis Death Rates in Buenos Aires.—While tuberculosis is by law a notifiable disease in Argentina, this provision remains to a large entent a dead letter. In a disease, such as tuberculosis, with a protracted course, intercurrent conditions and complications lend themselves to falsification of the true nature of the cause of death. In Buenos Aires the problem is further involved by the afflux of patients from the interior of the country in search of treatment, dying away from home. Available figures for the years 1925 and 1945 show a decreasing death rate for pulmonary tuberculosis from 173 to 82 per 100,000, while the general death rate declined from 13 to 11.4. Pulmonary tuberculosis, which was charged in 1925 with 13.2 per cent of the general death rate, by 1945 represented only 7.2 per cent of the total. The available data suggest Buenos Aires is now entering the "detuberculization stage" as has been the case with many other cities in the United States and England. While, in 1925, 50 per cent of the tuberculosis deaths occurred in men under 33 and in women under 25, by 1945 this load had moved to a more advanced age: 38.8 years for men and 27 years for women. The change was not parallel for both sexes and was much more marked among males. The death age which averaged 28 years among women and 34 years for men in 1925 became 30.5 and 38 years, respectively, by 1945.—*Variaciones de la tasa de mortalidad por tuberculosis pulmonar en la Capital Federal en el transcurso de los últimos veinte años, R. A. Izzo & A. Chouela, Pub. del Centro de Investig. Tisiol., 1946, 10: 189.*—(*A. A. Moll*)

Antituberculosis Campaign in Peru.—The number of deaths from tuberculosis reported in recent years in the 16 largest cities in Peru were: 1942, 4,252; 1943, 4,593; 1944, 4,409; 1945, 4,433. The death rates varied from 1,090.4 per 100,000 in 1943 in Tacna, to 157 per 100,000 in Cuzco in 1942. The rate for

Lima averaged 362 in the four-year period. In the localities so far surveyed, tuberculin tests have proved positive in 50 per cent of children under 17, and 85 per cent in persons between 17 and 60, and 35 per cent among infants. Inapparent infection rates among apparently healthy persons have totaled 3 to 5 per cent and active infection in suspected cases 16 per cent. Highest infection rates correspond to infants and the 20 to 24 age period. BCG vaccination was started in 1934 and the tuberculosis division in the National Department of Health was organized in 1937 and enlarged in 1941. It now includes local services in various areas in the country. The work is being developed along the recognized lines of tuberculin and X-ray surveys, dispensary and mobile X-ray units, hospitals, sanatoria, and preventoria. Present plans embrace gradual increase of number of hospital beds to 6,470, and of dispensaries to 14, operation of six tuberculosis units in the largest cities, and training of social service personnel. Funds available in 1946 added up to 5,392,000 *soles* (about $485,280), which included the revenue derived from tuberculosis seals. In addition, a loan of 20,000,000 *soles* (about $1,800,000) has been authorized for building sanatoria. The number of patients found by the dispensaries has increased from 2,878 in 1940 to 6,731 in 1946, and the number of persons examined, from 13,065 to 87,483.—*Cómo Desarrolla el Departamento de Tuberculosis de la Dirección General de Salud Pública el Programa de Control de la Tuberculosis, L. Cano Gironda, Rev. tuberc., (Lima, Peru), July–December, 1946, 6: 817.*—(*A. A. Moll*)

Tuberculosis Mortality in French Cities.—Study of the tuberculosis mortality in the large French towns in 1946 reveals a considerable decrease as compared to the rates of 1945. The latter had already shown a decline in comparison to the period 1934–1936.—*La mortalité par tuberculose dans les grandes villes françaises en 1946, A. Lotte, Mme. F. de Chambrun & M. Moine, Bull. Inst. Nat. d'Hyg., January–March, 1947, 2: 2.*—(*V. Leites*)

Tuberculosis in Sanatorium Employees.—While there are numerous reports concerning tuberculosis among student nurses and also other employees in general hospitals, reports are few concerning the employees of tuberculosis sanatoria. The author studied 1,000 employees of the Carlo Forlanini Institute from 1935 to 1944. During this period he observed 18 pleural effusions and 76 cases of pulmonary tuberculosis. Of the latter, complete data were available for those from 1938 on, namely, 56 cases. These are analyzed from the standpoint of clinical forms of the disease. Nine cases had an acute onset of influenzal type with fever, asthenia, joint pains and upper respiratory symptoms; the X-ray films showed one tuberculous pneumonia, 2 cases of nodular foci with rapid confluence and liquefaction, and 6 early infiltrates. Forty-seven cases had an insidious onset; 25 of these had slight toxemic symptoms, 13 moderate, 2 had hemoptyses, 3 had symptoms of toxemia with negative films which later became positive, and 4 had X-ray findings only. The analysis of symptoms in order of occurrence showed that fatigue, anorexia, indigestion, work intolerance and menstrual abnormalities came early; cough, dyspnea and chest pains were next noticed; and fever and loss of weight came later. The X-ray film of the 47 cases showed 3 fugitive infiltrates of the Loeffler type, 10 perifocal exudates near old healed nodules, and 34 new infiltrates. The infiltrates were definitely of exudative type, usually apical in location and described as polymorphous, of moderate or slight density, with indefinite or "unraveled" margins. These 34 were considered of essentially chronic type. Most of the employees promptly improved upon rest treatment.—*Forme Cliniche di Tuberculosi Polmonari in un Gruppo di Soggetti Addetti a Servizi Sanatoriali, G. Babolini, Arch. di tisiol. (Napoli), January, 1946, 1: 85.*—(*E. Kupka*)

Tuberculosis Survey in Switzerland.—A tuberculosis case-finding program was initiated in 1946 by the *Industrieverband* (industrial association) of the Canton Zug, in Switzerland

Zug is a small canton with 38,000 inhabitants, but a considerable number of important industrial enterprises and institutions are located there. X-ray films were taken of 4,180 people, most of whom were employed in industry. Participation was voluntary, but the management of the participating firms and institutions attempted to get coöperation by setting an example, and by explanatory talks. In all, 230 cases demonstrated abnormalities in their chest films, and 95 of these showed significant tuberculosis. Further breakdown of this last figure showed that there was one case of hitherto unknown open tuberculosis, 4 of known active but closed tuberculosis, 19 of unknown active closed disease, 50 of inactive closed disease hitherto unknown, and 21 of inactive closed known disease. Other conditions detected in this survey were 22 cases of intrathoracic goiter, 2 foreign bodies in the lung, 2 cases of sarcoidosis, one case of silicosis, one case of bronchiectasis, and 14 cases of chronic bronchitis and emphysema. There were 178 cases showing evidence of old scars and calcifications, presumably tuberculous. The preceding figures demonstrate the superiority of case-finding by X-ray surveys over any other known method. To aid in the eradication of tuberculosis, the author pleads for restriction of tuberculous foreign patients to institutions designed for the treatment of tuberculosis. He feels that the Swiss population is significantly endangered by the influx of foreigners who come to Switzerland to take the "cure," but who are permitted to move about the country with the freedom of the tourist.—*Schirmbildaktion des Zuger Industrieverbandes im Januar/Februar 1946, O. Weber, Schweiz. med. Wchnschr., February 22, 1947, 77: 264.*—(*H. Marcus*)

Tuberculosis Control in Shanghai.—The first step in tuberculosis control was undertaken in Shanghai in August, 1929 when the Municipal Health Department opened a tuberculosis sanatorium. Since then steady progress has been made in this work, the most important step having been the organization, in November, 1938, of the Shanghai Anti-tuberculosis Association which, since 1942, has operated the largest up-to-date tuberculosis hospital in Shanghai, devoted only to charity cases. Before the war 6 per cent of the population was estimated to have tuberculosis of some form. This number has increased after the war to 8 per cent or 240,000 persons with probably no less than 10,000 annual deaths. The mortality has risen from 1,161 in 1937 to 4,503 for 1941 and 2,269 for the first six months of 1942. Tuberculosis is the major cause of death in Shanghai.—*History of Tuberculosis Control in Shanghai, L. S. Huizenga, Chinese M. J., January–February, 1947, 65: 1.*—(*O. Pinner*)

Tuberculosis in Concentration Camps.—This work summarizes the experience with 243 people liberated from concentration camps, and with 53 foreign workers. These 296 people were examined at Herisau, and following the discovery of the appalling prevalence of tuberculous disease in this group hospital facilities were hurriedly provided. Of the group of 243 former inmates, only 106, or 44 per cent, were free from pulmonary tuberculosis. Twenty-five, or 10 per cent, showed inactive tuberculosis, and 112, or 46 per cent, showed active disease. Of the foreign workers, 12 showed active and 2 inactive disease. Of a small group of 13 Spaniards, only 2 were free from tuberculosis. Active tuberculosis was, therefore, found about 200 times as frequently in this small group than in a population at large. Inactive disease was found 13 times as frequently as in the general population. Study of this group of inactive cases showed that it is extremely unlikely that any of these cases contracted and healed tuberculous disease while imprisoned. It is concluded that they represent a selected group of people who had tuberculosis prior to incarceration, and their healed disease protected them from superinfection. As far as could be judged, there were 58 cases of active primary disease and 122 cases of active postprimary disease. There were 10 deaths in the primary group, and 5 in the postprimary group. Most of the

patients were in very poor condition on admission, and showed extensive bilateral disease with marked exudative lesions. Both groups responded extremely well to treatment in proper surroundings. The improvement was much greater than could have been anticipated from observation of equally bad cases under the usual living conditions. Deprivation and starvation apparently do not cause breakdown of endogenous tuberculous foci, but the staggering incidence was solely due to massive exposure. Failure of the inactive cases to break down under these conditions again bears out this conclusion. Because the prognosis of even hopeless appearing cases became favorable with proper management, the tuberculosis rate in Europe need not necessarily rise too high. The main problem is to detect and isolate the open case. Starvation in itself does not produce tuberculosis.—*Gestalt und Frühverlauf der Tuberkulose bei Patienten aus Konzentrationslagern, A. Zuppinger & A. Labhart, Schweiz. med. Wchnschr., January 25, 1947, 77: 144.*—(*H. Marcus*)

Apical Pulmonary Tuberculosis.—Older theories regarding the localization of tuberculous lesions are not in agreement with the results of animal experimentation. Neither can Roder's theory of increase in hydrostatic pressure be justified. The work of Cournand and Richards has shown that the systolic pulmonary arterial pressure is 18 to 30 mm. of mercury in the recumbent posture and is less when sitting or standing, especially in persons who move but little while in these positions. Since there is a fall in pressure along the course of a vessel the blood flow, formation of lymph or tissue fluid must be very slow in the upper third of the lungs. The right pulmonary artery being more tortuous, the systolic pressures will be lower on this side, and the relatively bloodless region larger than on the left. Thus inadequate pulmonary blood flow especially in sedentary persons, and those obtaining insufficient sleep, may account for the relatively high resistance of the lower position of the lung, and the tendency to progression of disease in one or both lung fields highest above the heart. Alveoli aerated through bronchi but deprived of normal blood flow will have the highest oxygen and lowest carbon dioxide content. Such a state favors the growth of tubercle bacilli. It is possible that relative ischemia may be conducive to accumulation of toxins, decreased antibody content and reduced phagocytosis. Tests of a conclusive nature, which could be done by injection of small quantities of radioactive isotopes, have not been done, hence the above assumptions are purely speculative. However, the low incidence of pulmonary tuberculosis in mitral stenosis and the high incidence in those with pulmonic stenosis are factors in support of this theory. This thesis would make absolute recumbency imperative regardless of the locale of the patient and would suggest that short periods of activity would not be deleterious.—*Reasons for the Common Anatomic Location of Pulmonary Tuberculosis, W. Dock, Radiology, April, 1947, 48: 319.*—(*G. F. Mitchell*)

Inapparent Tuberculosis.—In mass X-ray surveys in Rio de Janeiro, between 1 per cent and 3 per cent of all examined had non-apparent tuberculosis. Amongst the individuals exposed to contact, the incidence of active tuberculosis accidentally found in the survey was 5 to 12 per cent, which is 5 to 6 times higher than in the remainder of the population. For Rio de Janeiro, amongst 96,467 examined, 3,375, or 3.51 per cent, had tuberculosis. About half of these were in an active stage. The percentage of persons with positive X-ray findings was for San Pablo 2.02 per cent; for Porto Allegre 8.49 per cent; for Bahia 11.52 per cent. For all cities of Brazil, the incidence of tuberculosis among more than 175,000 surveyed people was 4.46 per cent, of which 2.18 per cent had active and 2.28 per cent had inactive tuberculosis. Approximately the same result was obtained in other countries of South America. The incidence of tuberculosis was highest among professional men and public servants. The use of photofluoroscopy and small film survey enables the detection of tuberculosis in a

relatively high percentage of supposedly healthy people. A complete review of all available statistics of the frequency of inapparent tuberculosis is given.—*Frecuencia de la tuberculosis inaparente, A. de Paula, Prensa méd. argent., August 30, 1946, 33: 1787.*—(*W. Swienty*)

Tuberculosis after Forty.—Among 217 cases of pulmonary tuberculosis in patients over 40 years old, 111 were in men and 106 in women. As in other series reported in the literature, the fibro-caseous type prevailed (156, as compared to 36 exudative and 25 fibrotic cases). This disproves contentions that a fibrotic pattern is characteristic of senile tuberculosis. Neither did the so-called "outburst" of tuberculosis among people in the forties find any support. Among both exudative and fibrotic cases the outcome became more serious as age advanced, but the number of patients was too small to justify definite conclusions, especially as to the former group. In fibro-caseous cases prognosis proved usually unfavorable, with little difference traceable to age. Among the 45 fatal cases in women the duration of the disease averaged twenty-one months and in 57 men twenty-four months, averaging twenty-two months for the entire series. A relationship to a preëxisting diabetes was apparent in women (in 29 out of 51 cases), especially after 50. For men, the rate was much lower. Fatal hemoptysis was also much more common with diabetes (in 6 out of a total of 11 cases). The rôle of intimate contact with patients was obvious in a moderate proportion of the whole group. Collapse therapy was generally well tolerated, but its success was not so apparent, the very worst results being in the 40 to 49 age period.—*La tuberculosis pulmonar después de los 40 años, R. Rossi, Pub. del Centro de Investig. Tisiol., 1946, 10: 81.*—(*A. A. Moll*)

Retracted Lung Stump.—The above name is proposed as more adequate for the condition variously designated as rigid and unexpandable lung. Three cases are reported and causation is discussed. Parenchymal fibrosis and a thickened visceral pleura being the predominating causes. Bronchial, parenchymal and pleural factors may bring about retraction of the pulmonary stump, but effusions, as a rule pleural, or a result of fistulous tracts, are most frequently at fault. Cases may develop after both artificial and spontaneous pneumothorax.—*Muñón pulmonar retraído postneumotorácico, A. Molina & P. Sprinsky, Pub. del Centro de Investig. Tisiol., 1926, 10: 241.*—(*A. A. Moll*)

Inspissated Cavities.—Inspissated cavities seem to be uncommon in pulmonary tuberculosis. The largest series (23 cases) so far reported was from Chile (1943). Among 865 patients treated in a Lima dispensary only 5 cases were found. In this group inspissation invariably occurred in early cavities with thin walls and not exceeding 20 mm. in diameter. Blockage of the draining bronchi plays an important pathogenic rôle. The most frequent seat was the external subclavicular area. Diagnosis depends on previous presence of a cavity and its replacement, as shown by X-ray films, by an opaque rounded mass. While roentgenological, and even clinical, improvement accompany the development of inspissation, it should not be interpreted as evidence of permanent healing. Watchful waiting is indicated, with surgical measures to be applied if signs of renewed activity develop. —*Cavernas empastadas, R. Vargas Machuca, Rev. tuberc., (Lima, Peru), July–December, 1946, 6: 751.*—(*A. A. Moll*)

Tuberculosis and Coccidioidomycosis.—The coexistence of active tuberculosis and coccidioidomycosis is rare. In a 27-year-old white soldier the diagnosis of coccidioidomycosis had been made in September, 1943 by roentgenological and sputum findings; after five months he had been discharged as apparently cured. In August, 1945 he developed a right hydropneumothorax. Examination of the pleural fluid showed tubercle bacilli on direct smear. Culture of the pleural fluid and guinea pig inoculation revealed the

presence of *Coccidioides immitis* and tubercle bacilli. "It is possible that a subpleural tuberculous cavity had ruptured into the pleura, with a resultant bronchopleural fistula, and that during this process extension into a well localized and latent coccidioidal infection had occurred."—*Coexisting Tuberculosis and Coccidioidomycosis, H. Rifkin, D. J. Feldman, E. Hawes & L. E. Gordon, Arch. Int. Med., April, 1947, 79: 381.*—(*G. C. Leiner*)

Tomography in Pulmonary Tuberculosis.—A review of basic roentgenographic considerations, and of the physical and technical principles of tomography (laminagraphy) are presented. The lung section at the level for which the tomograph is set appears sharply defined while the X-ray image of parenchyma above or below the respective level is underexposed and indistinct. Thus, the desired layer of parenchyma is visualized free of superimposed structures. In determining the exact localization of cavities, or the type and extent of a contemplated thoracoplasty, or the possible establishment of a Monaldi drainage, tomography has proved most valuable. Applied in infiltrative, non-cavernous cases of tuberculosis tomography has helped to analyze the complex opacities of the conventional film. It was found in some instances that lesions at one level were of recent, at others of an old fibrotic type, while the usual film showed a uniform appearance of the disease. Tomography is considered essential, therefore, in appraising age, resolution or healing of tuberculous lesions.—*Die Bedeutung der Tomographie für die Beurteilung der Lungentuberkulose, E. Haeflinger, Gegen die Tuberk., January, 1947, No. 1.*—(*B. Gerstl*)

Tuberculosis on Separation.—A report is given of a survey which includes the entire output of an Air Force Auxiliary Separation base which included practically all nationalities and races. In all, 24,615 men were examined, 23,537 of whom had no sign of any "significant chest abnormality." The findings are consistent with those on the induction examinations; both active and apparently healed tuberculous lesions are comparatively few. There was a total of 1.09 active cases per 1,000 men which is higher than might be expected, but lower than on pre-induction examination. Other diseases of the pleurae and lungs were found and are about the same as in other surveys. All men deferred because of chest abnormalities are in the 18 to 24-year age group. Whether the active tuberculous cases represent new or recurrent disease is a question meriting investigation. Since many had no induction X-ray films there were no cases of primary type disease and none of the active cases had miliary calcification in the parenchyma, it is believed that the disease was probably not acquired in the Army.—*A Study of 24,615 Separation Chest Roentgenograms, B. J. O'Loughlin, Radiology, April, 1947, 48: 389*—(*G. F. Mitchell*)

Chest Fluoroscopy.—The first phase of fluoroscopy is inspection of the diaphragm and bases of the lungs. The patient breathes deeply and is rotated 45 degrees from one side to the other. A medium-sized diaphragm is used. The second phase is inspection of the heart and mediastinum and of the general configuration of the chest, using a medium-sized or wide diaphragm. The technique is the same as during the first phase. The third phase is inspection of the lungs, especially the apices. A smaller diaphragm (about 10 x 15 cm. or less) is used. The patient is held by his arms, the shoulders are pulled down and forward and the patient is rotated to visualize any part of the apex. Fluoroscopy is superior to standard films in diagnosing apical tuberculosis, in detecting pleural fluid, disc-shaped atelectasis, various hidden pulmonary lesions and in the differential diagnosis of supraclavicular lymph node calcifications and apical calculi.—*The Technique of Chest Fluoroscopy, L. Walk, Acta radiol., 1947, 28: 14.*—(*J. E. Farber*)

Pendular Movement of Diaphragm.—An analysis of the phenomenon of Holzknecht-

Jacobson is given. It is frequently seen in bronchial stenosis. The inspiratory deviation takes place towards the side of obstruction. In the conditions due to bronchial stenosis there is usually a permanent displacement of the mediastinum which represents its new position of equilibrium, upon which the inspiratory deviation of the mediastinum is superimposed. Thus, in atelectasis due to bronchostenosis there is a permanent displacement of the mediastinum towards the side of atelectasis. Inspiration increases the displacement in the same direction. In obstructive emphysema the mediastinum is displaced towards the healthy lung, but during inspiration there is a movement of the mediastinum towards the side of stenosis. The pendular movement of the mediastinum is less clearly visible in atelectasis than in obstructive emphysema, since the border of the mediastinum is projected partly into the vertebral column, partly into the opaque atelelectatic lung. In stenosis without check-valve mechanism the mediastinum is not permanently displaced but remains in its normal median position and the Holzknecht Jacobson phenomenon can be observed in its pure form. The essential cause of the sign is seen in the fact that the involved lung does not react like a dilatable and elastic organ, but like a rigid block which does not vary its volume and which, when following the movements of the thoracic cage, draws the mediastinum in its direction. Besides the rigidity of the involved lung two other conditions are necessary to produce the Holzknecht-Jacobson phenomenon: A sufficient respiratory mobility of the hemithorax on the side of stenosis. In certain cases of atelectasis with complete immobilization of the thoracic cage on that side, the sign is absent. The second condition is the flexibility of the mediastinum making its displacement possible. The Holzknecht-Jacobson phenomenon cannot any more be considered as pathognomonic of bronchial stenosis. It has also been observed in cases of pleural symphysis and in acute consolidations of the lung. In both cases the introduction of air into the involved lung is abolished or impaired which produces a state of inspiratory disequilibrium. Four case reports are given in which the phenomenon was due to bronchial stenosis in primary tuberculosis.—*Le mouvement pendulaire du mediastin ou phenomène d' Holzknecht-Jacobson, M. Levrat, P. Galy & P. Martin-Noël, Rev. de la tuberc., 1946, 10: 127.*—(*V. Leites*)

Clicking Pneumothorax.—Some patients with a small pneumothorax on the left side may be conscious of a curious clicking sound synchronous with the heart beat. With the aid of the stethoscope, it is heard in various situations on the left side of the chest, most often near the apex. It is sometimes audible at a distance from the patient. It disappears if the pneumothorax increases in size. It varies in intensity with the position of the patient. Eight cases are reviewed in which the patient subjectively noticed the sound. In 5, the sound was heard by auscultation also. In 2, there was associated pain. Three patients developed a total pneumothorax within a short time, resulting in disappearance of the sound. The click is different from the sound which is heard in interstitial emphysema. It is probably due to an air bubble in contact with a pleural adhesion.—*Clicking Pneumothorax, A. P. Thomson, Lancet, May 10, 1947, 1: 631.*—(*A. G. Cohen*)

Pneumothorax in Pleurisy.—In 39 patients with pleurisy the pleural fluid was removed and replaced with filtered air. Twenty-eight patients completed successfully the treatment. The total of evacuating punctures was 44 and the number of refills 84 (averaging 3 per patient). Rest is enforced until no more fluid is visible. Disappearance of fluid occurred on an average in fifteen days. The method was introduced a few years ago by García Rosell in Lima. Definite conclusions will be reported as soon as a larger number of patients has been treated.—*Resultados del tratamiento por pneumo-serosa, V. M. Tejada, Rev. tuberc., (Lima, Peru), July-December, 1946, 6: 789.*—(*A. A. Moll*)

Fibrin Bodies.—Up to 1940 only 30 cases of intrapleural fibrin bodies in pneumothorax have been reported in the literature. Seven new cases are now described, all of them seen during the last four years. In 2 cases the bodies were free (floating), in one pedunculated, and in 2 sessile. These bodies, also called colloquially "pebbles" and "mice," are polymorphic, adjusting themselves to the shape of their localization. Their development seems sudden and in some cases they disappear spontaneously. In other cases they flatten themselves against the walls of the chest and roentgenographically they are classed as pachypleuritis. In one case examined pleuroscopically they looked like masses of snow.—*Cuerpos fibrinosos intrapleurales en el curso del pneumotórax, M. Espinosa Galarza, Rev. tuberc., (Lima, Peru), July-December, 1946, 6: 782.*—(*A. A. Moll*)

Phrenic Exeresis.—In 1939 Gramazio reported 106 cases of phrenic exeresis operated during the preceding five years, 54 with "good" results. Reviewing these 54 cases in 1945, there was no information regarding 13, but 20 had definitely relapsed. During the last five years, of another 106 patients who had thoracoplasty, 10 had had phrenic exeresis; of these 10, 2 had diffuse bronchopneumonic spread after thoracoplasty. Of the remaining 96 without phrenic, only 2 had this pneumonic complication. These findings indicate the failure of permanent healing, and likewise, the danger of thoracoplasty following phrenic exeresis. The permanent phrenic operation has lost ground markedly because of (*1*) the availability of major thoracic surgery in many cases; (*2*) failure of permanent healing; (*3*) increasing knowledge regarding the unfavorable effect upon the function of the lung; (*4*) the operation has become absolutely contraindicated if later thoracoplasty is anticipated. The indications for phrenic intervention are now limited to the following: (*1*) lower lobe disease on either side; (*2*) for apical involvement when the remainder of the lung is also involved (posthemoptoic dissemination) or when thoracic surgery must be long delayed (temporary phrenic only); (*3*) to supplement artificial pneumothorax *a*) when adhesions are present, *b*) at time of abandonment, especially where fluid is present; (*4*) in extrapleural pneumothorax which is not completely efficient; (*5*) as an emergency measure for persisting gross hemoptysis. It is often useful to inject the nerve with alcohol first to note the functional effect before operating on the nerve.—*Nota Aggiornativa Sulle Indicazioni Della Frenicoexeresi, A. Sesti, Gior. ital. d. tuberc., November, 1946, 1: 77.*—(*E. Kupka*)

Pneumoperitoneum.—The author has observed that even small amounts of air in the peritoneal cavity give rise to considerable diaphragmatic elevation. To explain this phenomenon he has reasoned that normally the abdominal cavity contains no "empty" space. The abdomen is completely filled by the organs it contains, and the interior of the abdominal wall and the lower surface of the diaphragm are in intimate contact with the organs, separated from them only by a small amount of fluid. It is this capillary attraction which keeps the abdominal organs in intimate contact with the diaphragm. The ligaments and other supports of liver, stomach, etc. are sufficiently lax so that they cannot be thought of as holding the liver to the undersurface of the diaphragm. When air is introduced into the abdomen, it immediately rises and severs this capillary attachment between the organs and the diaphragm. The weight of the abdominal organs no longer "hangs" on the diaphragm, and the diaphragm, thus released, follows the opposing intrapleural pressure which sucks it into the chest. Normally there exists an antagonism between the intrapleural pressure, negative on inspiration, and the abdominal pressure, positive on inspiration. The introduction of air into the pleural cavity makes the diaphragm descend, because of unopposed abdominal pressure, and air in the peritoneal cavity elevates the diaphragm, because of unopposed pleural pressure. The accuracy of this reasoning was tested by in-

jection of air intraperitoneally into a fresh corpse. Roentgenograms taken before and after demonstrated that both diaphragms had risen considerably in the upright posture.—*Zur Wirkungsweise des Pneumoperitoneums, K. Lenggenhager, Schweiz. med. Wchnschr., March 1, 1947, 77: 283.*—(*H. Marcus*)

Tuberculosis of Tonsils.—Tonsillectomy was performed on 85 out of 387 children with all forms of tuberculosis. The indication fell into one of three groups. In group 1 the adenoids were markedly enlarged causing mouth-breathing with the usual train of symptoms; in group 2 there was marked enlargement of the tonsils with frequent attacks of tonsillitis and pharyngitis, with or without cervical adenitis; in group 3 a presumptive diagnosis of tuberculosis of the tonsils was made because of a discrepancy between the child's general condition and the extent of the obvious tuberculous disease. The children in group 3 were often in poor general condition, had high sedimentation rates and did not gain weight and strength properly in spite of the fact that the evident tuberculous focus was retrogressive. In all these cases the tonsils were enlarged and appeared chronically inflamed, and often there was enlargement of the cervical lymph nodes. Tuberculosis of the tonsils or adenoids was found in serial section in 27 instances in this group of 85 patients. With the exception of 2 cases, the tuberculous foci consisted of small disseminated foci which showed little tendency to caseation. In these 25 cases the tuberculous process in the tonsils appeared to be part of a hematogenous dissemination. In 2 cases with extensive cervical adenitis with fistula formation, the tonsils were massively involved and the disease was probably primary in the tonsils. Removal of the tonsils appeared to cure the cervical adenitis. No serious complications were encountered. One child developed an exudative pleuritis four weeks postoperatively, but did well thereafter. On the other hand, improvement in general condition with weight gain and relative freedom from respiratory infection was observed in the majority of the tonsillectomized children.—*Tonsillektomie bei tuberkulösen Kindern, E. Martens, Schweiz. med. Wchnschr., January 25, 1947, 77: 146.*—(*H. Marcus*)

Tuberculosis of Tonsils.—Focal infection of the tonsils has proved to be of great importance in such diseases as nephritis and rheumatic fever, but tuberculous infection of the tonsils as a cause of bone and joint tuberculosis in children has not been generally accepted. Primary tuberculosis of the tonsil does occur. The frequency of its occurrence has not been settled, and when tuberculosis of the tonsil is diagnosed it is hard to prove that it was the primary focus. Histologically, primary infection of the tonsil is usually found in the depth of the crypts, and tuberculosis of the draining cervical lymph nodes is frequent. In a recent study by Ellonen, tonsillectomy was performed on 74 children with bone and joint tuberculosis. None of these children had pulmonary tuberculosis, and only one an exudative pleuritis. Histologically tuberculosis was found in 20, or 27 per cent, of these patients, and it might be supposed that this figure would be higher if all of the tonsillar tissue removed could have been subjected to detailed histological examination. Ellonen argues that it is impossible for the tonsils to have become infected by the hematogenous or lymphogenous route from the bones and joints, and the tonsil must have been the primary focus. Tuberculosis of the tonsil cannot usually be diagnosed clinically, and it may be that many children who have positive tuberculin tests but no evidence of calcifications in the lung field or root shadows have primary tuberculosis of the tonsils. All of Ellonen's cases were concerned with the human bacillus, since bovine tuberculosis is practically unknown in Finland, but it might be supposed that figures for tuberculous tonsillitis would even be higher in countries where tuberculous cattle abound. Clinically it has been observed repeatedly that tonsillectomy changes the progress of a child to a

favorable one after many months of standstill, and it is felt that all cases of children's tuberculosis ought to be seen by the otolaryngologist for evaluation of the tonsillar tissue.—*Tonsillen und Tuberkulose, H. Vetter, Schweiz. med. Wchnschr., March 15, 1947, 77: 323.*—(*H. Marcus*)

Bone and Joint Tuberculosis in Finland.—Finland introduced a pension law in 1939 including all individuals between 18 and 54 but excluding those unable to work. This led to extensive surveys concerning the morbidity of bone and joint tuberculosis. A total of 2,135 persons (one per cent of the population) were found to suffer of this disease, 63 per cent of whom needed hospitalization. The incidence is high when compared with western countries but lower than that of the Leningrad area. Therapy, in 60 per cent of the cases, was instituted only two years after onset of the disease and its results were highly unsatisfactory. Preventive measures and improvement of therapy are advocated.—*Die den infolge von Knochen- und Gelenk-tuberkulose Arbeitsunfähigen zuteil gewordene Behandlung, P.E.A. Nylander, Ann. Chir. et Gynaecol. Fenniae, 1947, Vol. 36, Supplementum 1.*—(*B. Gerstl*)

Resistance of Tubercle Bacilli to Streptomycin.—Tubercle bacilli isolated from guinea pigs inoculated with sputum, urine or material obtained on gastric lavage from tuberculous patients who were being treated with streptomycin are as resistant as cultures isolated directly from the same materials. Cultures of tubercle bacilli from patients receiving streptomycin retain their resistance to the drug even after residence in guinea pigs for ten weeks or more and subsequent maintenance on glycerinated egg-yolk agar for many weeks. Cultures from untreated tuberculous patients usually are resistant to only 0.08 to 0.62 μg. of streptomycin per milliliter of medium and the majority to 0.15 μg. After treatment some cultures are resistant to 2,000 μg. of streptomycin.—*Persistence of Resistance of Tubercle Bacilli to Streptomycin during Passage through Guinea Pigs, A. G. Karlson, W. H. Feldman & H. C. Hinshaw, Proc. Soc. Exper. Biol. & Med., January, 1947, 64: 6.*—(*F. B. Seibert*)

Streptomycin and Sulfones in Experimental Tuberculosis.—The chemotherapeutic effect of streptomycin combined with sulfone compounds was greater than the sum of the effects from the individual components. The chemotherapeutic effectiveness (ratio of extent of tuberculous involvement in a group of untreated controls and treated groups) in a group of guinea pigs treated with 40 mg. (40,000 units) streptomycin per kg. of body weight daily was 14.4. Treatment with 10 to 15 mg. per kg. per day under similar conditions gave a ratio of 5.2, and with 20 mg. streptomycin per kg. per day plus 500 mg. 4-amino-4′-propylamino-diphenylsulfone per kg. per day was 28.6. The chemotherapeutic effectiveness of the sulfone alone was 3.7. Similar but less marked effectiveness was obtained in combined therapy with streptomycin and 4-amino-4′-succinimidodiphenylsulfone and still less with sulfadiazine.—*Chemotherapeutic Action of Streptomycin and of Streptomycin with a Sulfone or Sulfadiazine on Tuberculosis, M. I. Smith, W. T. McClosky, E. L. Jackson & H. Bauer, Proc. Soc. Exper. Biol. & Med., February, 1947, 64: 261.*—(*F. B. Seibert*)

BCG in Russia.—Results of infant vaccination with BCG in the U.S.S.R., begun in 1924, have recently been made available. After a period of preliminary studies, the first applications of the vaccine were made in the Ukraine in 1926. Between 1926 and 1928, according to Medovikov, 818 infants in this region received BCG. In Leningrad, vaccinations were begun in 1928 and were extended in 1929 to four other large cities: Moscow, Saratov, Kazan and Rostov-on-the-Don. These cities were selected because of the presence of specialists qualified to use BCG under experimental conditions. In these five cities, 454 newborn infants received BCG in 1929. In Leningrad, 310 infants were vaccinated between 1928 and 1934. Meantime, in 1928, a BCG Commis-

sion was created to control this work. In Leningrad, among the 310 infants vaccinated, 87.6 per cent were in direct, intimate contact with tuberculosis. However, in this group, mortality was 4.3 per 100 compared with 16.4 per 100 in a control group of 79 non-vaccinated infants. Because of these results, the studies were extended to include 9,967 infants vaccinated in Leningrad between 1934 and 1936. Mass vaccination of the newborn was begun in 1937. During the first year of this campaign, 40,000 infants received BCG. In 1938, in Leningrad alone, 43,962 infants were vaccinated. From 1937 to 1940, inclusive, more than 2,000,000 infants were vaccinated throughout the country; in the larger cities, the percentage of vaccinated newborn infants exceeded 90 during 1940 and 1941. In almost all cases, the BCG was administered orally: 2 cc. in milk, 3 times, at forty-eight-hour intervals, or a single 3 cc. dose. Thirty-five per 100 vaccinations by the subcutaneous route were reported from the Leningrad series—all others being oral. All vaccinations were given during the first ten days of life. No mention is made of separating these infants from their tuberculous milieu. Local benign lymphadenitis was reported only in the Moscow group, where a different strain of BCG was employed. No case of cold abscess was found in the infants inoculated subcutaneously; incidence of lymphadenitis was 0.5 per 100 in the subcutaneous group; 2.6 per 100 in the oral group. Klebanov, reporting on the Moscow study in 1938, compared two groups of infants: 56,951 vaccinated, 17,469 not vaccinated. Both groups appeared healthy at the time of vaccination. Tuberculosis mortality in the vaccinated group at the end of one year was half that of the non-vaccinated controls. This result is the more remarkable in so far as the infants in the first group were exposed to a considerably greater degree of tuberculosis in the family. During the first six months of life, there was no appreciable difference between the mortality rates in the two groups of infants. Mortality rates after the second year were comparable to the one-year results. Morbidity rates for this same series of infants revealed percentages similar to the mortality figures. Mass vaccination with BCG begun in 1937 in Moscow and Leningrad, at which time the infant mortality was at an index of 100, produced, after four years, a reduction in the index to 60, thus establishing the unquestionable efficacy of oral BCG vaccination for newborn infants.—*La prévention de la tuberculose par le BCG en U.S.S.R., S. A. Abolnick, Ann. Inst. Pasteur, April, 1947, 73: 373.*—(*P. Q. Edwards*)

BCG in Leprosy.—In a preventorium in Paraguay 31 apparently leprosy-free lepers' children were inoculated with BCG using Rosenthal's technique. A previous tuberculin and photoroentgenographic survey had shown 77 per cent to be tuberculin-positive; some had primary lymph node involvement. In 20 of the group a previous negative Mitsuda test became positive after vaccination with BCG. In the other 11, in which the results of the Mitsuda test before vaccination were unknown, 82 per cent proved positive after vaccination with BCG. It is suggested that in endemic leprosy areas BCG might be considered for protection against leprosy if it is accepted that a positive Mitsuda test means relative immunity to leprosy.—*La reacción de Mitsuda an los vacunados con BCG: Posibilidad de la vacunasión BCG en la profilaxis de la lepra, A. R. Ginés & J. G. Poletti, Mem. y Com. Sec. Prof. y Epidem. Tuberc., 1946, 4: 5.*—(*A. A. Moll*)

Stain for Acid-fast Bacilli.—A new method is described for staining tubercle and leprosy bacilli, the bacilli of Johne's, Traum's and Gollerstedt's diseases, the acid-fast saprophytes, Moiser's "oval bodies" and, at least parts of the younger forms, of actinomyces and the common molds, such as aspergillus, penicillium and mucor. In a certain stage of their development, the spores of some bacteria, for example, *B. anthracis*, *B. subtilis* and *B. perfringens*, can be stained by this method. The dye *Nachtblau* (Grübler & Co.) which in watery solutions behaves like a colloid, is used

in combination with water, alcohol and phenol. There are two different procedures: the successive method in which *Nachtblau* is followed by counterstaining with pyronin, neutral red, carbol-fuchsin, vesuvin or Bismarck-brown; and the simultaneous method in which the staining solution contains both *Nachtblau* and pyronin. Tubercle bacilli are dark-blue and appear larger and more numerous than in Ziehl-Neelsen preparations; they have sharper outlines and stand out more clearly against the red or yellow background; all this makes them more easily detectable. In tuberculous sputa all the other organisms of the buccal flora take the counterstain with the exception of a yeast-oidium-like fungus which usually stains with *Nachtblau* like the tubercle bacilli. This fungus corresponds to that of Reenstierna (1912), found able to produce acid-fast rods with the same morphological and tinctorial qualities as those of the tubercle bacillus. Schaumann and Hallberg found fungus cells quite similar to those described by Reenstierna in *lymphogranulomatosis benigna*, together with other acid-fast forms. In pus from lymph nodes of guinea pigs inoculated with tuberculous material, acid-fast fungus cells were found with this staining method. The complete morphology of the causative agent of tuberculosis, leprosy and other diseases will be studied, since the classical bacilli are believed to be merely evolutionary stages originating from lower, commonly occurring fungi. (4 color plates)—*A New Method for Staining Tubercle Bacilli, Applicable Also to the Micro-Organism of Leprosy and Other Acid-fast Germs, V. Hallberg, Acta med. Scandinav., 1947, Supplementum 180.*—(*O. Pinner*)

Papain for Sputum Digestion.—The use of papain, a proteolytic enzyme from the green fruit of the papaya, in the homogenization of sputum has proved to be of great value in simplifying the demonstration of tubercle bacilli contained in such sputum, by microscopic examination, culture or guinea pig inoculation. The technique consists of adding 0.05 to 0.10 g. of papain powder to 4 to 5 cc. of sputum. (Dissolve 20 g. of papain in 200 cc. of water at 20° C., filter, sterilize, store in the ice-box; 1 cc. of the solution is used as above.) The mixture is placed in a water-bath at 60° for forty-five minutes. Homogenization, which begins in fifteen minutes, is almost complete in twenty minutes, becoming of a water-like consistency. No alcohol is needed to enhance liquefaction. After centrifuging, the residue is smeared on a slide and stained by the usual Ziehl method. Preparations thus made reveal disappearance of most bacteria other than the tubercle bacilli, which retain their form and staining properties. Concentration of tubercle bacilli by this method is about 10 times that normally obtained; that is, sputum showing one bacillus per 10 fields by ordinary methods of preparation, show one bacillus per single field after this type of digestion with papain. Further advantage lies in the selective qualities of the papain digestion, as all other bacteria are apparently destroyed by the process. Culture and guinea pig inoculation of the residue reveal growth of tubercle bacilli, if present.—*Homogénéisation des crachats et des exsudats pathologiques par la digestion papainique en vue de la recherche du bacille de Koch, P. Sédallian & R. Corraz, Ann. Inst. Pasteur, April, 1947, 73: 398.*—(*P. Q. Edwards*)

Measurement of Growth of Tubercle Bacilli.—*M. tuberculosis var. hominis* H37Rv and No. 607, and *M. tuberculosis avium* were grown diffusely in Dubos' medium, containing Tween 80 and their rate of growth determined turbidimetrically with a Klett-Summerson colorimeter. A satisfactory turbidity was obtained with 1 mg. of cell material per milliliter, as checked by plate counts of viable bacteria. A standard curve was made in this way. Pathogenic strains grew at a slower rate than the saprophytes. The effect of nitrogenous materials on the rate of growth was studied and also the effect of streptomycin.—*Quantitative Measurements of Growth of Mycobacterium tuberculosis: Effect of Strep-*

tomycin, Dorothy G. Smith, Proc. Soc. Exper. Biol. & Med., January, 1947, 64: 36.—(F. B. Seibert)

Demonstration of Acid-fast Bacilli.—A new method for bacterioscopic investigation of acid-fast bacilli in organic fluids and tissues is described. It is based on the method of Fernández and Olmos, which uses density differences to concentrate leprosy bacilli, and of Dharmendra, which uses chloroform extraction for the same purpose. Satisfactory results have been obtained in urine, sputum, pleural effusion, spinal fluid, gastric juice, and skin lesions (lupus vulgaris, tuberculoid leprosy), etc. The technique described is simple and more sensitive than those now in use. (Authors' summary)—*Nuevo método para la investigación bacterioscópica de bacilos ácido-resistentes, M. Bergel, J. M. M. Fernandez & A. Serial, Rev. méd. de Rosario (Argentina), January, 1947, 37: No. 1.*

Pathogenicity of Tubercle Bacilli.—Antigenic complexes made by extracting H37Rv strain of human *M. tuberculosis* by means of trichloracetic acid, trypsin digestion, diethylene glycol or urea appear to increase generalized infection in guinea pigs receiving very small numbers of organisms. It is suggested that such complexes may function as a "virulence factor" for the tubercle bacillus in a susceptible species of host.—*Pathogenicity of the Tubercle Bacillus, S. Raffel, Proc. Soc. Exper. Biol. & Med., April, 1947, 64: 507.—(F. B. Seibert)*

Tuberculosis in Mice.—Mice, three to six weeks old, inoculated intravenously with 0.01 cc. of whole culture of H37Rv, grown seven to ten days on a medium containing 0.05 per cent Tween 80 and 0.2 per cent bovine albumin, and having an approximate density of 0.2 mg./cc., begin to lose weight during the second week after infection and die in three to four weeks with a disease primarily pulmonary. The infection is greatly enhanced by the addition of fresh egg-yolk to the culture. The H37Ra culture, however, fails to establish a progressive infection or to produce grossly visible lesions even with the addition of egg-yolk. Fifteen different strains of mice differed greatly in their susceptibility to tuberculous infection by the intravenous and intraperitoneal routes.—*Infection of Mice with Tubercle Bacilli Grown in Tween-Albumin Liquid Medium, Cythia Pierce, R. J. Dubos & G. Middlebrook, Proc. Soc. Exper. Biol. & Med., February, 1947, 64: 173.—(F. B. Seibert)*

Vole Bacillus.—In the course of work with the vole acid-fast bacillus, the authors wished to use a more recently isolated strain. Two calves were given intravenous injections of 5 mg. of 7-day-old cultures. A similar dose of an older strain (LV 285) had been given to 142 animals without ill effects. One calf died in one month; the other became moribund in eight weeks and had to be slaughtered. In neither were there macroscopic lesions severe enough to cause death. However, there were wide-spread histological lesions of a nature usually associated with tuberculosis. Fifteen other calves were injected without ill effects. In 5 of these, the vole strain was recovered from tissues six months later; in 2, the organism was recovered after 564 and 544 days, respectively. Similar observations were made on rabbits and guinea pigs. The results indicate that the use of the vole acid-fast bacillus as a living vaccine is not unattended by risk. The authors believe that previous work indicating a low virulence was not carried out in a manner likely to determine the highest possible virulence.—*Virulence of a Strain of the Vole Acid-fast Bacillus (G 564), J. A. Young & J. S. Paterson, Lancet, May 24, 1947, 1: 707.—(A. G. Cohen)*

Gastric Secretion in Tuberculosis.—In 100 patients with tuberculosis of the lungs fractional gastric determinations with test meals were conducted. About 28 per cent showed absence of free hydrochloric acid, and 47 per cent hypoacidity. Both anacidity and hypoacidity were more common among febrile

patients, in the more serious and bilateral cases and in the presence of high blood sedimentation rates. Roentgenoscopy in 53 patients failed to reveal any organic lesion of the stomach. In 8 cases marked signs of gastric atony were present. Age of patients or duration of the disease had little bearing on the result.—*Sobre la secreción gástrica y el tuberculoso pulmonar, G. A. Guiroy, Pub. del Centro de Investig. Tisiol., 1946, 10: 203.*—(*A. A. Moll*)

Reticulocyte Rates.—Reticulocyte and red cell counts were made in 102 patients (54 men and 48 women) with pulmonary tuberculosis. As a basis for comparison similar determinations were conducted in a group of normal persons. The rates in patients varied according to the clinical type and the stage of the process, and even in the same case as changes in condition occurred. The absolute rate (number of reticulocytes) was not a reliable sign, but the relative rate (ratio to red cells) proved significant as evidence of the functional status of the bone marrow. Reticulocyte rates have no diagnostic value but they possess a certain prognostic significance and may help to determine the outcome and guide treatment. When the course was favorable the rate at first rose but decreased when improvement became definite. In stationary cases values were normal or increased. In unfavorable cases they were invariably above normal. All determinations were made during fasting periods. The results generally agreed with those reported by others, but values were lower in this series. A review of the literature on reticulocyte rates both in tuberculosis and other conditions is given. Normal figures taken for comparison were: men, red cells 4,500,000 to 5,000,000; women, 4 to 5 million; reticulocytes, 36,000 and 36,230, respectively. Reticulocyte ratio to red cells, 0.72 per cent for men and 0.79 per cent for women.—*El reticulocito en la tuberculosis pulmonar, D. Raúl Rinaldi, Pub. del Centro de Investig. Tisiol., 1946, 10: 125.*—(*A. A. Moll*)

Congenital Absence of Lung.—A case is reported in which aplasia of the lung was associated with a rudimentary bronchus. The roentgenological findings in aplasia of the lung include displacement of the mediastinum to the affected side, opaque hemithorax and herniation of the opposite lung. Bronchograms show absence of the carina or a rudimentary bronchus, if present, as in the reported case.—*Congenital Aplasia of the Lung, W. M. Nesbit, L. W. Paul & W. S. Middleton, Am. J. Roentgenol., April, 1947, 57: 446.*—(*J. E. Farber*)

Bronchiectasis, Nasal Polyps and *Situs Inversus*.—Bronchiectasis and nasal polyps occur in 10 per cent of persons with *situs inversus*. The hereditary mechanism in these conditions is dominant. There is a constitutional relation between lesions of the accessory sinuses and the bronchial tract. *Situs inversus* is a complication in development due to different genes including genes causing bronchiectasis and allergy.—*Transposition of Viscera, Bronchiectasis and Nasal Polyps, J. Torgersen, Acta radiol., 1947, 28: 17.*—(*J. E. Farber*)

Asbestosis in Finland.—Asbestosis is an industrial disease not often observed in Scandinavia. In Finland, where a considerable asbestos industry has been established, the disease appears to occur to an appreciable extent. One hundred twenty-six cases of mild, moderate and far advanced stages of asbestosis are reported. The roentgenological characteristics of the changes in the lungs, the differential diagnosis, the classification in different stages and the importance of the time of exposure are discussed in detail.—*Changes in the Lungs in 126 Cases of Asbestosis Observed in Finland, C. Wegelius, Acta radiol., 1947, 28: 139.*—(*J. E. Farber*)

Alumina Abrasives.—The authors describe an unusual form of lung disease apparently related to work in an industry previously

considered innocuous. As a preliminary step in the manufacture of corundum, all persons worked at the electric furnace processing a mixture of bauxite, iron and coke, for periods of several years. During this operation, dense white fumes, containing considerable quantities of alumina and silica in a fine state of division, are evolved. Of 344 exposed individuals, 35 manifested definite X-ray changes consisting of mediastinal widening and bilateral granular shadows becoming coarser in the more advanced cases. Emphysema was frequently present. There were 13 men with doubtful pulmonary changes. The main symptoms were cough and dyspnea; the latter was progressive in the severe cases, occasionally resulting in serious disability. Spontaneous pneumothorax, occasionally bilateral, was a frequent complication. Seven patients died of the disease. Pathologically, the disease is an interstitial lung fibrosis, nonnodular in type, and accompanied by severe emphysema. There was no evidence of tuberculosis in any of the specimens. The etiology is not clear; these workers were exposed not only to alumina and silica but also to small quantities of many other substances. These patients first came to notice in 1942; the authors believe that the disease developed as the result of increased exposure resulting from accelerated war production.—*Lung Changes Associated with the Manufacture of Alumina Abrasives, C. G. Shaver & A. R. Riddell, J. Indust. Hyg. & Toxicol., May, 1947, 21: 145.*—*(H. R. Nayer)*

Early Coccidioidomycosis.—Due to a number of factors, it is probable that there will be a decided increase in the number of sporadic cases of coccidioidal infections. Since serial roentgenograms in many cases are necessary for a detailed roentgen study of the disease, such a study was undertaken in an area where the disease was endemic. The résumé included complete immunological and laboratory studies and detailed residence and travel records. Working where the disease is prevalent, there is little difficulty in recognizing the disease, but it should be suspected in any person with respiratory disease recently returning from an area of endemic infections. An intracutaneous test will rule out the disease in all but a few cases. Clinically it is most likely confused with influenza or bronchopneumonia. Roentgen findings in the early stages are nonspecific and could be explained by bronchopneumonia, tuberculosis, primary atypical pneumonia or rheumatic pneumonitis, especially the last two. The diagnosis in such cases can be made only on specific laboratory tests. With persistence of the infection hemoptysis with or without cavitation may occur and a diagnosis of tuberculosis made. Since the disease tends to clear in two to six weeks, the diagnosis is usually not difficult. However, over 21 cases were seen in whom the infection persisted from three to over twenty-four months. Diagnosis is especially difficult in the protracted type of the infection, having the roentgen appearance of advanced ulcerative tuberculosis. Mediastinal adenopathy accompanied many of the more severe cases or protracted infections, in which the disease may be confused with mediastinal neoplasm. Cases in which mediastinal adenopathy is dominant give rise to most of the fatalities and may be confused with Hodgkin's disease, tuberculosis, sarcoidosis or bronchogenic carcinoma. Due to the type of onset the roentgenologist often sees residual "burned-out" foci, one or more circumscribed nodules 1 to 4 cm. in diameter or cyst-like foci easily confused with tuberculosis or metastasis. In cases having multiple residual nodules the onset is usually with severe constitutional symptoms and temperature of 100° to 103° F. for two to four weeks. The discrepancy between the clinical and roentgen findings is often helpful in establishing a diagnosis.—*Roentgen Findings in Early Coccidioidomycosis, H. W. Jamison & R. A. Carter, Radiology, April, 1947, 48: 323.*—*(G. F. Mitchell)*

Iron Lung in Whooping Cough.—The results obtained with the iron lung in spastic bronchitis encouraged the writers to try this

method in pertussis cases during the 1943 epidemic in Buenos Aires. Over 100 cases have been so treated, 53 which completed the treatment having been taken for this report. All were benefited. In some improvement was noticeable from the first application. Among outstanding results were the improved appetite and sleep, decrease of attacks and maintenance of weight in an appreciable number of cases. The iron lung might perhaps also prove useful to prevent bronchitis in pertussis. The number of applications reached as many as 20, being given on alternate days. The stay in the lung averaged twenty minutes and was invariably well tolerated. It is advisable to give the treatment on an empty stomach.—*La tos convulsa: Su tratamiento por el pulmón de acero, R. Rabanaque-Caballero & J. Dupont, Pub. del Centro de Investig. Tisiol., 1946, 10: 25.*—(*A. A. Moll*)

Sputum in Kerosene Poisoning.—By mistake, 2 patients treated for pulmonary tuberculosis received slow intravenous injections, 10 cc. and 4.5 cc., respectively, of kerosene. The sputa were examined for nine consecutive days. From these examinations it was found that the broncho-alveolar changes went through three different stages: (*1*) hypersecretion of mucus; (*2*) exudation with extravasation of leucocytes and macrophages; (*3*) reappearance of mucus hypersecretion which slowly disappeared on the ninth or tenth day. A fine emulsion of kerosene was found in the sputum even after several weeks. The reaction to the kerosene was an acute broncho-alveolitis as it is caused by other foreign bodies, but aggravated by its toxicity. —*La inclusion de esputos en dos casos clinicos de inyeccion intravenosa accidental de kerosene, J. J. Scandroglio, Hoja tisiol., March, 1946, 6: 21.*—(*W. Swienty*)

Pancoast Tumors.—Symptoms and signs of Pancoast tumor are: (*1*) shoulder pain, which may be an early symptom; (*2*) damage to the brachial plexus, resulting in atrophy of arm and hand muscles; (*3*) Horner's syndrome; (*4*) bone destruction, the paravertebral parts of the ribs being affected most commonly. Two cases of Pancoast tumors are presented; on autopsy squamous cell carcinomata were found.—*Beitrag zur Klinik der Geschwülste der oberen Lungenfurche* (*Pancoast—Tumoren*), *H. Schnetz & R. Salis, Wien. klin. Wchnschr., February 14, 1947, 51: 89.*—(*G. C. Leiner*)

Bronchogenic Carcinoma.—The symptoms, physical findings, diagnostic and therapeutic procedures of bronchogenic carcinoma are discussed. The importance of adequate pre- and postoperative management is stressed. Over a period of four years, 196 cases of bronchogenic carcinoma were seen. Of these, only 20 per cent were operable. The operative mortality was 5 per cent.—*Surgical Aspects of Bronchogenic Carcinoma, J. C. Jones, J. A. M. A., May 10, 1947, 134: 113.*—(*H. Abeles*)

Primary Carcinoma of Lung.—Primary bronchogenic carcinoma is frequently confused with pulmonary tuberculosis. To help differentiate these two conditions the authors recommend the use of body section roentgenography in addition to the conventional diagnostic methods.—*Primary Bronchogenic Cancer Mistakenly Diagnosed as Pulmonary Tuberculosis, W. R. Oechsli & K. B. Olson, Am. J. Roentgenol., April, 1947, 57: 429.*—(*J. E. Farber*)

Pulmonary Cysts.—Pulmonary cysts are divided into two chief types: those from the bronchial tree and those that are alveolar in origin. This article is concerned primarily with the bronchogenic type. Pulmonary cysts may be acquired or congenital. Fifty-four cases are included here and divided into three groups. The first group consisted of proved bronchogenic cysts, the second of cysts with fibrous walls probably bronchogenic with changes in wall due to pressure or infection, and the third of cystic bronchiectasis with dilatations greater than 3 cc. Twenty-four males and 20 females ranging in age from

7 to 58 with an average of 30. Cysts were found in all lobes of both lungs. Symptoms are characterized by their variability. The status of the bronchial communication and infection are the major factors in symptom production with cough and sputum being most common. Hemoptysis of varying amounts, dyspnea and pain are common. Mistakes in diagnosis are most often pneumonia and tuberculosis. Pulmonary suppurative disease may coexist and be primarily responsible for the patient's symptoms. Carcinoma may develop secondarily in bronchogenic cysts. Cystic bronchiectasis may be a factor in cyst production. X-ray is the most important single aid to diagnosis, but correlation with clinical history will most often give the correct diagnosis. Bronchoscopy and bronchography are seldom of positive value. If there is doubt as to diagnosis, exploratory thoracotomy is highly recommended. Recommended treatment is complete surgical removal.—*Pulmonary Cysts, H. J. Moersch & O. T. Clagett, J. Thoracic Surg., April, 1947, 16: 179.*—(*J. H. Cope*)

Asthma in Children.—Thirty-four children from 2 to 14 years of age with recurrent attacks of asthma and nasopharyngeal lymphoid hyperplasia received radon treatment. The treatment was preceded by complete otolaryngologic, allergic and pediatric examinations. The treatment of each child consisted of two gram minutes of radon to each side of the nasopharynx once each month for an average of four treatments. In 23 of the 34 cases the lymphoid tissue disappeared completely. In some cases severe asthmatic attacks developed after the first or second treatment. All forms of asthma were represented. Sixty-eight per cent of the patients obtained from total to 50 per cent relief and 32 per cent obtained no relief.—*Asthma in Children: Treatment with the Radium Nasopharyngeal Applicator, A. T. Ward, Jr., S. Livingston & D. A. Moffat, J. A. M. A., April 12, 1947, 133: 1060.*—(*H. Abeles*)

Obstructive Emphysema.—A fatal case of obstructive emphysema was observed in a 73-year-old female patient. Two years prior to her death, the patient had been operated on for a round cell sarcoma of the thyroid. Obstructive emphysema was caused by the later development of mediastinal metastases, which compressed both main bronchi, principally the right. A valvular effect was produced with persistent overinflation of both lungs, especially the right upper and middle lobes. Pressure readings from the right lung showed positive values during inspiration and expiration. Following lung puncture, the sites did not close, and extensive subcutaneous emphysema persisted until death a few days later. At autopsy the presence of extensive mediastinal metastases encasing the main bronchi was confirmed.—*Dyspnoe, positive Druckwerte der Lunge, B. Zeerleder, Schweiz. med. Wchnschr., December 21, 1946, 76: 1313.*—(*H. Marcus*)

Pulmonary Embolism.—The prophylaxis of pulmonary embolism consists of the prevention of thrombus formation in the deep veins of the legs. The use of dicumerol offers the best method of protection in the age group between 40 and 65. In patients beyond the age of 65 interruption of the superficial femoral veins is the method of choice. Below the age of 40 the routine use of prophylactic measures is not advocated. If thrombosis has developed, interruption of the deep vein should be performed. If thrombophlebitis is present the treatment will consist of procaine block of the lumbar sympathetic nerves, heat application, heat and activity. Phlebotomy and thrombectomy will shorten the course of thrombophletitis when combined with interruption of the superficial femoral vein. If infarcts continue after vein ligation, anticoagulents should be used.—*Venous Thrombosis and Pulmonary Embolism, A. W. Allen, R. R. Linton & G. A. Donaldson, J. A. M. A., April 26, 1947, 133: 1268.*—(*H. Abeles*)

Pulmonary Decortication.—Results of modern decortication have been markedly influ-

enced by present methods of anesthesia, chemotherapy and blood transfusions. Timing is important in this operation, being best done in three to five weeks in uninfected cases, and from two to three weeks in infected cases. The visceral peel is removed to the parietal reflection; this is not removed as it prolongs the operation and increases shock without appreciable benefit. Two and sometimes three intercostal water-seal drains are used, for pulmonary reëxpansion; one in the first interspace anteriorly, and the second dependent in the postero-axillary line. Penicillin and transfusions are used routinely. The indications for decortication are uninfected, organizing hemothorax, infected organizing hemothorax, post-traumatic empyema. No operative deaths occurred in 125 patients. The operation may be done without rib resection. This operation is a major one and should not be done unless the hematocrit and serum protein levels are normal, plenty of blood for transfusion is available; chemotherapy should be used routinely before and after surgery and the services of a good anesthetist are mandatory.—*Total Pulmonary Decortication, P. C. Samson & T. H. Burford, J. Thoracic Surg., April, 1947, 16: 127.*—(*J. H. Cope*)

Pulmonary Decortication.—Hemothorax is the most common complication of intrathoracic wounding, and up to the recent war there was diversity of treatment. The first decortication in the military services was done in 1943. This paper discusses 140 cases with organizing hemothoraces treated by decortication. Eighty-nine were uninfected and 51 were infected. There were no deaths. In 108 cases good results were obtained. In the remaining 32 cases, or 23 per cent, fair results were obtained in 26, and poor results in 6. Of 51 cases of preoperative empyema, 25 cases, or 50 per cent, healed primarily; 23 healed in a period of weeks, and 3 became chronic empyemata. The incidence of intrapleural clotting is higher in war than in wounds of civil life. At time of decortication, the peel removed was found to contain bacteria in 90 per cent of cases. At surgery, only the visceral peel was removed. It was considered very important to free all adhesion to the entire lung including the diaphragmatic surface, and also arrange the lobes in their normal position to secure rapid and complete reëxpansion.—*The Treatment of Organizing Hemothorax by Pulmonary Decortication, W. M. Tuttle, H. T. Langston & R. T. Crowley, J. Thoracic Surg., April, 1947, 16: 117.*—(*J. H. Cope*)

Hemothorax and Empyema.—Two hundred and twenty-nine patients with fluid in the pleural space or drained empyemata are the subject of this review. Intrapleural foreign bodies, and the severity of the wounds, particularly abdomino-thoracic wounds are stressed as important etiological factors in empyemata. Simple hemothorax was treated by repeated aspirations without air replacement. Clotted hemothorax is diagnosed by aspiration of amounts of fluid from the pleural space that are smaller than physical and X-ray signs indicate. Efforts to attain cure by aspiration and breathing exercises are made. With large clotted hemothoraces, thoracotomy is used, with decortication of the scar being done. It is very important to free the lung completely. The scar tissue is removed from the thoracic wall to facilitate normal function. Small bronchopleural fistula that are opened are usually of no consequence when the chest is drained properly. Two drains, one high anterior and one postero-lateral, were used continually under water seal. If the lung did not expand completely, secondary decortication was done. In one case microscopic tubercles and acid-fast bacilli were found in the decorticated material. No lung lesion was found. Recovery was uneventful. Empyemata were treated with open drainage. No empyema was successfully treated with aspiration alone. Breathing exercises and early activity are essential to cure. Some previously treated empyemata need small unroofing operations to complete the cure. Bronchopleural fistulae usually closed when drainage was adequate. Decortication opera-

tions were the treatment of choice in infected hemothoraces unless the patient's condition was too poor or the hemothorax was less than 500 cc. The indications for decortication in empyema were large multilocular empyemata, depression of the lung apex, intrathoracic foreign bodies and failure of open drainage. The technique was the same as for clotted hemothorax. Penicillin is advisable prior to and after decortication. However, in this series the frequent occurrence of gram-negative non-penicillin sensitive organisms was noted. Breathing exercises are stressed as an essential part of treatment to promote lung expansions and cure.—*Hemothorax and Empyema in a Thoracic Center, G. N. J. Sommer, Jr. & W. O. Mills, J. Thoracic Surg., April, 1947, 16: 154.*—(*J. H. Cope*)

Chronic Hemothorax.—Chronic traumatic pneumothorax is defined as a hemothorax that is not reducible by thoracocentesis, even though fresh blood has ceased to enter the pleural cavity. Even though the complete explanation of organizing hemothorax cannot be given, the process as seen clinically can be accounted for by the deposit of fibrin on the pleural surfaces. The basic response of pleura to the irritating factors of trauma or blood is serous effusion. Severity or type of trauma, with or without bacteria, may result in excess fibrin. A clotted hemothorax or a fibrinothorax becomes a fibrothorax, by organization of the intrapleural mass, similar to vascular clots. The different clinical behavior and manifestations in infected patients is explained by fibrin acting as a barrier to leucocytic invasion, resulting in a latent period before the centre of the pleural mass is reached, with the formation of pus. Infolded lung is explained as an entity that can be confused with gross, organizing hemothorax, but is recognizable on lateral X-ray film as a more patchy and diffuse process, with no localization. The importance of recognizing the condition, particularly at time of decortication, is stressed, as adhesions between lobes and portions of the lung upon itself must be separated to allow for complete and rapid reëxpansion. However, lung-infolding alone may be confused with organizing hemothorax. It is important to recognize this entity, and while reëxpansion may be slow, surgery is not necessary.—*The Pathology of Chronic Traumatic Hemothorax, H. T. Langston & W. M. Tuttle, J. Thoracic Surg., April, 1947, 16: 99.*—(*J. H. Cope*)

Diaphragmatic Hernia Repair.—This is an experimental study in the use of a sliding fibro-voluntary muscle flap in the repair of diaphragmatic hernia. Dogs were used for the study. A large portion of the left diaphragm was excised in each dog. The original chest incision was over the tenth rib. The *latissimus dorsi* was incised over the upper border of the tenth and reflected down to below the eleventh rib as a pedicle. The eleventh rib was resected subperiosteally. The pleura was incised through the bed of the eleventh rib. The *latissimus* pedicle was swung into the pleural space and sutured over the diaphragmatic defect without tension. The cephalad portion of the *latissimus* was sutured to the tenth intercostal substance and both were sutured to the caudal pedicle of the *latissimus* where it crossed the cut edge of the bed of the eleventh rib, thus reëstablishing a normal *latissimus* function. Postoperatively no significant deformity was noted. Subsequent follow-up showed a flattened left diaphragm. Though displacement of the esophageal hiatus occurred, no hernias were detected. Sections of *latissimus* showed fatty degeneration and replacement fibrosis in five months.—*Transthoracic Repair of Large Diaphragmatic Hernias: An Experimental Study, T. C. Chisholm, J. Thoracic Surg., April, 1947, 16: 200.*—(*J. H. Cope*)

Early Sarcoidosis.—In an attempt to determine whether there are any lesions suggestive or characteristic of early pulmonary sarcoid disease, a series of cases were studied. While sarcoidosis, a disease of protean manifestations, is often seen when only one system is involved, pulmonary involvement is seen at some time in 90 per cent of cases. Roentgen

findings are also protean in character. While many writers have described the various pulmonary findings, only a few have mentioned what they believe to be a characteristic early lesion; of these most believe that the diffuse miliary type is probably the early lesion. Absolutely nothing characteristic was noted in the findings of the individual case in the series reviewed. However, the intrathoracic adenopathy did tend to conform to a curious pattern in half of the cases revealing simultaneous enlargement of both sets of hilar nodes and only the right upper paratracheal nodes. The writer believes that the roentgen findings may be one of the four following types: (*1*) disseminated miliary parenchymal lesions, (*2*) diffuse or localized nodular parenchymal lesions, (*3*) parenchymal densities with hilar and paratracheal adenopathy or (*4*) hilar and paratracheal adenopathy alone. The miliary type of pulmonary sarcoidosis occurred as an early finding in only a few of the cases.—*Pulmonary Sarcoidosis: The Early Roentgen Findings, L. H. Garland, Radiology, April, 1947, 48: 333.*—(*G. F. Mitchell*)

Sarcoidosis Simulating Glomerulonephritis.—Sarcoidosis is now recognized as a generalized granulomatous disease of unknown cause which may involve any part of the body. Renal involvement, however, especially when accompanied by extensive retinal changes, is so unusual in sarcoidosis that a case of this type is reported in detail. A 23-year-old Negro developed nocturia in December, 1944; weight loss, headaches and visual impairment gradually appeared. In April, 1945, fever, retinitis, anemia, albuminuria and azotemia with normal blood pressure were found. In June, enlarged lymph nodes were biopsied and showed sarcoidosis. Hypercalcemia hyperglobulinemia and insensitivity to tuberculin were present. During the next ten months fever, lymphadenopathy and retinal changes subsided; hypercalcemia decreased; anemia and renal insufficiency improved. Only 3 other cases of sarcoidosis with renal insufficiency could be discovered in the literature. These 3 presented symptoms quite similar to the authors' case. The pertinent data in all 4 cases are presented in tabular form. In the authors' case the retinal lesions were not typical of those found in nephritis. The arteries were little if at all involved; the veins completely bore the brunt of the pathological changes; and the retinal changes subsided while the renal insufficiency did not improve, which indicates that the retinitis was not due to renal failure. While the diagnosis of sarcoidosis can be made with certainty only on finding the typical pathological changes, the disease should be suspected when hyperglobulinemia and hypercalcemia are found in the presence of azotemia. (Illustrated)—*Sarcoidosis Simulating Glomerulonephritis, H. F. Klinefelter & S. M. Salley, Bull. Johns Hopkins Hosp., November, 1946, 79: 333.*—(*J. S. Woolley*)